In summary, 16.4% of patients (group 1+3) were formally not treatable using TAVI.
Conclusion: The majority of patients with AVS scheduled for TAVI show suitable AAS for current devices. Anyhow, a substantial number of patients are not eligible due to oversized aortic annulus diameters. Consecutively, the development of larger prostheses is crucial to embrace this not negligible minority of patients.

TCT-761

Prognostic Impact of Permanent Pacemaker Implantation Among Patients With Severe Aortic Stenosis Undergoing Transcatheter Aortic Valve Implantation

Lutz Buellesfeld[1], Stefan Strotecky[1], Sven Hausen[3], Peter Wenaweser[1], Thomas Pilgrim[1], Bernhard Meier[1], Ulrich Gerckens[2], Eberhard Grube[3], Stephan Windecker[1]
[1]Bern University Hospital, Bern, Switzerland; [2]Gemeinschaftskrankenhaus, Bonn, Germany; [3]Bonn University Hospital, Bonn, Germany

Background: The occurrence of conduction abnormalities requiring the implantation of a permanent pacemaker (PPM) in patients undergoing transcatheter aortic valve implantation (TAVI) is not rare, with an incidence ranging between 5-30% in published series. To investigate the impact of PPM on prognosis, we compared clinical outcomes of patients with severe aortic valve stenosis undergoing TAVI in the following three groups: (1) patients with PPM prior to TAVI, (2) patients with TAVI-related PPM and (3) patients without PPM before and after TAVI.
Methods: A total of 351 consecutive patients (mean age 82.1±6.7 years, mean logEuroscore 24.2±15.4%) with symptomatic aortic valve stenosis (mean gradient 44.6±16.3mmHg) undergoing TAVI with use of the 18F Medtronic CoreValve prosthesis (n=293, 83.5%; transfemoral: 288, subclavian: 5) or the Edwards Sapien prosthesis (n=58, 16.5%, transfemoral: 24, transapical: 34) were prospectively followed in this two-center observational study. A total of 47 patients (13.4%) had a PPM prior to TAVI (group 1), 98 patients (27.9%) received a PPM during the peri-procedural period (group 2) and 206 patients required no PPM during follow-up (group 3). The primary endpoint of the study was mortality at one year follow-up. Secondary endpoints included in-hospital mortality as well as rates of stroke and myocardial infarction in-hospital and at one year.
Results: Device success was 97.4% without differences between the three groups. In-hospital and one-year follow-up was available in 100% of alive patients. Overall in-hospital and one year mortality were 4.6% (16/351) and 22.8% (80/351), respectively, without significant differences among the different study groups (see table). Rates of in-hospital stroke, infarction and access site complication were 2.6%, 0.9%, 13.7%. Detailed clinical follow-up will be presented.

		n	Mortality	
			In-hospital	One year Follow-up
Group 1	previous PM	47 (13.4%)	3 (6.4%)	13 (27.7%)
Group 2	new PM	98 (27.9%)	4 (4.1%)	25 (25.5%)
Group 3	no PM	206 (58.7%)	9 (4.3%)	42 (20.4%)
Total		351 (100%)	16 (4.6%)	80 (22.8%)

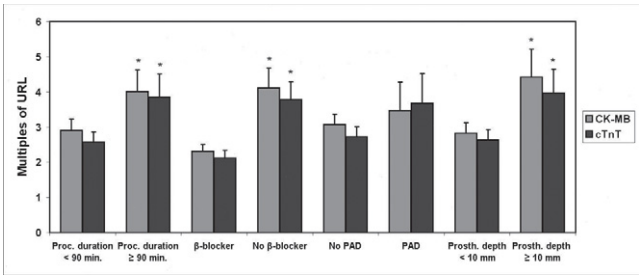
Conclusion: In this observational study, patients with severe aortic stenosis undergoing TAVI had a similar survival independent of the need of PPM implantation, which underlines the benign nature of this complication.

TCT-762

Predictive Factors and Prognostic Value of Periprocedural Myocardial Injury During Transcatheter Aortic Valve Implantation

Ze Yie Yong, Kirsten Boerlage - van Dijk, Karel T Koch, Marije M Vis, Berto J Bouma, José P Henriques, Riccardo Cocchieri, Jan J Piek, Bas A de Mol, Jan Baan
Academic Medical Center, Amsterdam, Netherlands

Background: Periprocedural myocardial injury (PMI) is a common complication during cardiac surgery and percutaneous coronary intervention and is an important predictor for postprocedural cardiovascular morbidity and mortality. Very few data have been reported about the occurrence of myocardial damage associated with transcatheter aortic valve implantation (TAVI). Therefore, our purpose was to investigate the incidence, the predictive factors and clinical consequences of PMI during TAVI.
Methods: In a prospective observational single-centre study, we included 117 patients (age 81±8 years, 46 male), who had undergone a TAVI with the Medtronic-CoreValve® bioprosthesis. Serum CK-MB and cTnT levels were measured pre- and postprocedurally. Periprocedural myocardial injury was defined as a postprocedural increase of CK-MB and/or cTnT level above 5 times the upper reference limit, as obtained from the Valve Academic Research Consortium.
Results: Following TAVI the incidence of PMI was 18%. Independent predictive factors for PMI were procedural duration (minutes, OR: 1.04; 95%CI: 1.01-1.07), preprocedural beta-blocker use (OR: 0.13; 95%CI: 0.03-0.51), peripheral arterial disease (OR: 6.08; 95%CI: 1.47-25.13) and prosthesis depth (millimeters, OR: 1.28; 95%CI: 1.05-1.56). Mortality within 30 days following TAVI was 13%. Predictive factors identified for 30-day mortality were PMI (OR: 10.89; 95%CI: 2.49-47.53), preprocedural hospitalization (OR: 9.96; 95%CI: 2.32-42.66) and left ventricular mass index (gr/m2, OR: 1.02; 95%CI: 1.00-1.03).



Conclusion: Following transcatheter aortic valve implantation, serum levels of both CK-MB and cTnT increase, which reflects the occurrence of periprocedural myocardial injury. A longer procedural duration, the absence of beta-blocker use, peripheral arterial disease and a deeper prosthesis insertion are associated with PMI. Together with preprocedural hospitalization and left ventricular mass, PMI

TCT-763

Aortic valve calcium scoring (AVCS) is a predictor of significant paravalvular aortic insufficiency in transapical aortic valve implantation

Martin Haensig[1], Lukas Lehmkuhl[1], David M Holzhey[1], Chirojit Mukherjee[1], Joerg Kempfert[2], Thomas Walther[2], Axel Linke[1], Matthias Gutberlet[1], Ardawan J Rastan[1], Friedrich W Mohr[1]
[1]Heart Center, University of Leipzig, Leipzig, Germany; [2]Kerckhoff Clinic, Bad Nauheim, Germany

Background: Transapical aortic valve implantation (TA-AVI) has evolved as a routine for selected high-risk patients. However, paravalvular leaks >1+ remain an unsolved issue using current generation of transcatheter valve devices. The aim was to study the impact of aortic valve calcification on paravalvular leaks and outcome using the Edwards SAPIEN™ prosthesis.
Methods: 120 consecutive patients (out of 307 TA-AVIs) with preoperative computed tomography, age 82.6±6.2 years, 75.0% female, were included. Implanted prosthetic valve sizes were 23 mm (n=31), and 26 mm (n=89), respectively. Mean logistic EuroSCORE was 30.1±15.5 and mean STS-Score 12.8±7.9. ECG-gated cardiac CT allowed to quantify the amount of calcification of aortic valve leaflets using a scoring analogous to the Agatston calcium scoring of coronary arteries (AVCS). Paravalvular leaks were assessed intraoperatively by echocardiography and angiography.
Results: All valves were implanted successfully. Mean AVCS in patients without paravalvular leaks (n=66) was 2704±1510, with mild paravalvular leaks (n=31) 3804±2739 (p=0.05) and with moderate paravalvular leaks (n=4) 7387±1044 (p=0.002). There was a significant correlation between AVCS and paravalvular leaks (r=0.334; p=0.001) indicating, of note, only a limited degree of linear dependence. No correlation was found to 30-day mortality, postoperative pacemaker-implantation and stroke-rate (r=0.040, p=0.671; r=0.117, p=0.232 and r=-0.025, p=0.792). Overall 30-day mortality was 14.2%.
Conclusion: The AVCS identifies patients at risk for a relevant paravalvular leak. AVCS prior to TA-AVI might serve as an additional tool to reconsider the TAVI indication and valve size to reduce the risk of paravalvular leaks.

TCT-764

Transcatheter Aortic Valve Replacement: Outcome of Patients with Moderate or Severe Mitral Regurgitation

Stefan Toggweiler[1], Robert H Boone[1], Karin Humphries[1], May Lee[1], Rodrigo Bagur[2], Alexander B Willson[1], Ronald K Binder[1], Ronen Gurvitch[1], Jasmine Grewal[1], Brad Munt[1], Robert Moss[1], Christopher R Thompson[1], Jian Ye[1], Cheung Anson[1], David A Wood[1], Josep Rodes-Cabau[2], John G Webb[1]
[1]Cardiology, St. Paul's Hospital, Vancouver, Canada; [2]Quebec Heart & Lung Institute, Quebec City, Canada

Background: The influence of moderate or severe MR on TAVR outcomes is unknown.
Methods: This study included 535 consecutive patients undergoing TAVR with a balloon expandable valve at 2 centers. Patients with moderate or severe MR before TAVR were compared to patients with none or mild MR. .
Results: A total of 149 patients (28%) presented with concomitant moderate or severe MR and 386 (72%) had none, trivial or mild MR. Patients with moderate or severe MR were older (median age 84 vs. 82 years, p = 0.01) and exhibited a higher risk profile (median STS score 8.2 vs. 7.4 %, p = 0.01). MR improved from moderate or severe to none or mild at discharge in 79/148 (53%) patients and worsened from none or mild to moderate or severe in 16/379 (4%). Survival rates for patients with and without moderate or severe MR at baseline were 85.0% and 93.4% at 30 days, 72.3% and 79.2% at 1 year, and 53.4% and 51.8% at 3 years, respectively (logrank p = 0.038, Figure). Moderate or severe MR was an independent risk factor for mortality during the first 30 days (unadjusted HR 2.32 (95% CI 1.31, 4.11), p < 0.01, adjusted HR 2.25 (1.25, 4.05), p < 0.01), but not after 30 days (unadjusted HR 1.03 (0.57, 1.85), p = 0.92, adjusted HR 1.04 (0.57, 1.90), p = 0.90). At 1 year follow-up, only 4% of the patients with moderate or severe MR at baseline and 5% of the patients with none or

POSTERS